

DETAILED ACTION

Applicant's response, on June 27, 2008, to the Action on the Merits of this case mailed February 12, 2008, is acknowledged. It is acknowledged that Applicants have amended Claim 41. Claim 41 is pending and is hereby reconsidered.

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to Applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Claims

Replace Claim 41 with:

41. A method of identifying breast cancer cells that are either resistant or sensitive to inhibition of cellular proliferation by a protein tyrosine kinase inhibitor comprising the steps of:

- (a) determining the expression of a gene expression product from the EphA2 gene in breast cancer cells,
- (b) normalizing the value of the expression of said gene expression product from the EphA2 gene to an internal control gene that is GAPDH or other housekeeping gene;
- (c) comparing the normalized value for said gene expression product from the EphA2 gene to the average normalized expression value of said gene expression product from the EphA2 gene in a panel of control breast cancer cells,
wherein said panel of control breast cancer cells consist of a plurality of breast cancer cells that are sensitive and a plurality of breast cancer cells that are resistant to said protein tyrosine kinase inhibitor; and
- (d) predicting whether said breast cancer cells are resistant or sensitive to inhibition of cellular proliferation by the protein tyrosine kinase inhibitor,

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wherein a normalized expression level of said gene expression product from the EphA2 gene in said breast cancer cells that is higher, relative to the average normalized expression level of said gene expression product from the EphA2 gene in said panel of control breast cancer cells, is indicative of sensitivity to the protein tyrosine kinase inhibitor, while a normalized expression level of said gene expression product from the EphA2 gene in said breast cancer cells that is lower, relative to the average normalized expression level of said gene expression product from the EphA2 gene in said panel of control breast cancer cells, is indicative of resistance to the protein tyrosine kinase inhibitor, and

wherein said protein tyrosine kinase inhibitor is an inhibitor of Src, Fgr, Fyn, Yes, Blk, Hck, Lck, Lyn, BCR-ABL, PDGFR, c-Kit, and EphA2.

Authorization for this examiner's amendment was given in a telephone interview with Steve D'Amico on September 16, 2008.

Allowable Subject Matter

Claim 41 is allowed.

The following is an examiner's statement of reasons for allowance:

The allowable claim, Claim 41, is limited to a method of predicting whether breast cancer cells will be sensitive or resistant to a protein tyrosine kinase inhibitor by determining the expression of a gene expression product from the EphA2 gene in said breast cancer cells. The protein tyrosine kinase inhibitor is an inhibitor of Src, Fgr, Fyn, Yes, Blk, Hck, Lck, Lyn, BCR-ABL, PDGFR, c-Kit, and EphA2. The expression of the gene expression product from the EphA2 gene is normalized to the expression of a housekeeping gene. The normalized expression of said gene expression product from the EphA2 gene in the tested breast cancer cells is compared to the normalized expression of said gene expression product from the EphA2 gene in a control panel of breast cancer cells consisting of a plurality of breast cancer cells sensitive to

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the protein tyrosine kinase inhibitor and a plurality of breast cancer cells resistant to the protein tyrosine kinase inhibitor. How to predict sensitivity or resistance, based on said comparison is recited.

The utility of said method is credible based on the following. The specification discloses testing a panel of breast cancer cells for sensitivity/resistance to a protein tyrosine kinase inhibitor that inhibits Src, Fgr, Fyn, Yes, Blk, Hck, Lck, Lyn, BCR-ABL, PDGFR, c-Kit, and EphA2 (Fig 1). Gene profiling in said panel of breast cancer cells was performed and genes that correlate to sensitivity or resistance to the protein tyrosine kinase inhibitor identified (Fig 2). The EphA2 gene was identified as useful for determining if breast cancer cells are sensitive or resistant to the protein tyrosine kinase inhibitor (Tables 9-12).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheridan L. Swope whose telephone number is 571-272-0943. The examiner can normally be reached on M-F; 9:30-7 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Nashed can be reached on 571-272-0934. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published application

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/SHERIDAN SWOPE/
Primary Examiner, Art Unit 1652